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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,099	09/03/2003	Yoshiaki Tanaka	10844-31US (203055 (C-1))	4884
570	7590	12/22/2005	EXAMINER	
AKIN GUMP STRAUSS HAUER & FELD L.L.P. ONE COMMERCE SQUARE 2005 MARKET STREET, SUITE 2200 PHILADELPHIA, PA 19103			ALEXANDER, MICHAEL P	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/654,099

Applicant(s)

TANAKA, YOSHIKI

Examiner

Michael P. Alexander

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) 19-22 and 39-58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 23-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 09/03/03, 02/04/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claim(s) 1-58 is/are pending.

#### ***Election/Restrictions***

Upon further review, the Examiner has determined that restriction between Group I (claims 1-22 and 43-58) and Group II (claims 23-42) will not be required.

#### ***Election/Restrictions***

This application contains claims directed to the following patentably distinct species of the claimed invention: (1) cylindrical case type fuse, (2) thin type fuse, (3) substrate type fuse.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-10 and 23-30 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with William Schwarze on 8 December 2005 a provisional election was made with traverse to prosecute the invention of the cylindrical case type fuse, claims 11-18 and 32-38. Affirmation of this election must be made by applicant in replying to this Office action. Claims 19-22 and 39-58 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the applicant does not specify whether the percentages are weight percent, atomic percentage, etc. Dependent claims 2-58 are indefinite in that they do not clarify the indefiniteness of claim 1.

***Claim Rejections - 35 USC § 102***

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Dohmi (JP 2000-141078-A).

Regarding claim(s) 1, Dohmi teaches (Example 18) a material wherein said material has an alloy composition in which Sn 59%, Bi is 5% and In is 30%. With respect to the recitation that the material is “for a thermal fuse element”, the Examiner considers this a recitation of intended use which doesn’t result in a structural difference between the claimed invention and the material of Dohmi. Since the material of Dohmi is capable of performing the intended use, then it meets the claim.

Regarding claim(s) 2, Dohmi teaches (Example 18) that the material would further contain 2.5% Ag.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saruwatari (JP11-40025-A).

Regarding claim(s) 1, Saruwatari teaches (0009) a material for a thermal fuse element wherein said material has an alloy composition in which Sn is 35 to 48 weight percent, Bi is 0.3 to 6 weight percent and In is about 26 to about 55 weight percent. The disclosed ranges of Sn, Bi and In overlap with the claimed ranges of Sn, Bi and In, which is prima facie evidence of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the claimed amount of Sn, Bi and In from the ranges of Sn, Bi and In disclosed by Saruwatari because Saruwatari teaches the same utility throughout the disclosed ranges.

Regarding claim 3, Saruwatari teaches (0009) an alloy type thermal fuse wherein the material is used as a fuse element.

Regarding claim 5, the Examiner asserts that the fuse element would inherently contain inevitable impurities.

Claims 2, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saruwatari as applied to claim 1 above, and further in view of Tanaka (JP 2001-266724-A).

Regarding claim(s) 2, Saruwatari do not specify adding 0.1 to 3.5 weight parts of Ag to the alloys composition of claim 1. However, Tanaka teaches (0014) adding 0.5-

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3.5 weight parts of Ag to a substantially similar thermal fuse composition in order to lower the resistivity. It would have been obvious to one of ordinary skill in the art to modify the material of Saruwatari by adding 0.5-3.5 weight parts of Ag in order to lower the resistivity as taught by Tanaka.

Regarding claims 4 and 6, see the rejections of claims 3 and 5 above.

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saruwatari or Saruwatari in view of Tanaka as applied to claims 3-6 above, and further in view of JP 11306940 A.

Regarding claims 7-10, Saruwatari teaches (0002) that the fuse element is connected between lead conductors but does not specify that at least a portion of each of said lead conductors would be covered with an Sn or Ag film. However, JP 11306940 A teaches (abstract) applying a Sn or Ag film to the surface of lead conductors in order to improve the bonding strength of the lead conductors. It would have been obvious to one of ordinary skill in the art to modify the method of Saruwatari or Saruwatari in view of Tanaka by applying a Sn or Ag film to the surface of the lead conductors in order to improve the bonding strength of the lead conductors as taught by JP 11306940 A.

Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saruwatari or Saruwatari in view of Tanaka or Saruwatari in view of JP 11306940A or Saruwatari in view of Tanaka and JP 11306940A as applied to claims 3-10 above, and further in view of Ishioka (JP403110732A).

Regarding claims 11-18, Saruwatari teaches (0010) that lead conductors are bonded to ends of the fuse element, respectively, a flux is applied to said fuse element, said flux-applied fused element is passed through a ceramic tube (i.e. cylindrical case), and gaps between ends of the ceramic tubing and the lead conductors are sealingly closed. Saruwatari does not specify the ends of the lead conductors have a disk-like shape, and ends of the fuse element are bonded to front faces of the disks.

Still regarding claims 11-18, Ishioka teaches (abstract) providing lead conductors with a disk-like shape at the ends of the lead conductors and bonding the fuse elements to the front faces of the disks in order to prevent flux from adhering to the ends of the cylindrical case and to achieve quick separation when the fuse is activated. It would have been obvious to one of ordinary skill in the art to modify the method of Saruwatari or Saruwatari in view of Tanaka or Saruwatari in view of JP 11306940A or Saruwatari in view of Tanaka and JP 11306940A by providing lead conductors with a disk-like shape at the ends of the lead conductors and bonding the fuse elements to the front faces of the disks in order to prevent flux from adhering to the ends of the cylindrical case and to achieve quick separation when the fuse is activated as taught by Ishioka.

Claims 23-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saruwatari or Saruwatari in view of Tanaka, JP 11306940A, and/or Ishioka as applied to claims 3-18 above, and further in view of Cole (GB 2028608 A).

Regarding claims 23-38, the aforementioned mentioned references do not specify providing a heating element for fusing off said fuse element. However, Cole teaches (abstract) providing a resistor to blow a thermal fuse in order to terminate



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heating in a heating circuit for an electric blanket. It would have been obvious to one of ordinary skill in the art to modify the aforementioned reference by providing a resistor to blow a thermal fuse in order to terminate heating in a heating circuit for an electric blanket as taught by Cole.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Alexander whose telephone number is 571-272-8558. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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